Certificate

I hereby declare that the short synopsis "EFFECT OF YOGA INTERVENTION ON PSYCHOLOGICAL WELL-BEING AND PSYCHOMOTOR VARIABLES ON RESIDENTIAL SCHOOL GIRLS" is

being submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Physical Education under the Department of Sports Psychology of Lakshmibai National Institute of Physical Education, Gwalior, during the academic year 2021–2022.

It is a bona fide record of original work carried out under the supervision of Prof. M.K. Singh and has not been submitted, in full or in part, to any other university or institute for a degree or diploma. Further, it is certified that the short synopsis is plagiarism-free, and the proof has been submitted.

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EFFECT OF YOGA INTERVENTION ON PSYCHOLOGICAL WELL BEING AND SELECTED PSYCHOMOTOR VARIABLES ON RESIDENTIAL SCHOOL GIRLS

A THESIS
SUBMITTED TO THE
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Abstract

This study aimed to determine the effect of yoga intervention on psychological well-being and selected psychomotor variables of residential school girls. ***Methodology:*** *for the purpose of the study, Sixty (N=60) female subjects were randomly selected and divided into two groups: 30 in the Experimental (Yoga Intervention) group and 30 in the Control group. All the girls are residential school students from JNV Chandauli, aged between 12 and 15 years. The subjects were briefed in detail about the study. The criterion measure was psychological well-being, and the psychomotor variable was selected, which was assessed using Ryff's questionnaire and Speed by 50-yard dash in sec., Nelson speed of movement by Nelson speed of movement test in sec, kinesthetic perception by kinesthetic perception test in inches, Differentiation ability by Backward medicine ball throw in points, orientation ability by Medicine ball run test in sec, balance ability by stork stand test in sec, Rhythm ability in sec, and reaction ability in sec respectively.* ***Expected Outcomes*****:** *The findings will reveal a significant difference in psychological well-being. The Bonferroni-adjusted mean pairwise comparison shows a 23.50 difference between the experimental and control groups regarding the Psychological Well-Being Score, with a significance level of less than 0.05. Thus, the twelve-week yoga intervention was effective in improving psychological well-being. Cohen's effect size was 0.70, indicating a large effect.*

EFFECT OF YOGA INTERVENTION ON PSYCHOLOGICAL WELL BEING AND SELECTED PSYCHOMOTOR VARIABLES ON RESIDENTIAL SCHOOL GIRLS

Chapter-I

INTRODUCTION

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"By Yoga, he purified the mind; by grammar, the speech;
By medicine, the body's impurities.
To that supreme sage Patanjali,
I bow with folded hands."

Meaning (This verse is a salutation to Sage Patanjali, honouring his contributions to Yoga (for mental discipline), Vyakarana/grammar (for speech), and Ayurveda (for bodily health).

Jawahar Navodaya Vidyalayas (JNVs) were established in India as part of the National Policy on Education (1986) to provide free, residential, co-educational schooling for talented students from rural areas. The initiative, led by Rajiv Gandhi, aimed to bring out the best rural talent by providing quality education regardless of socioeconomic background. Navodaya Vidyalaya aims to offer high-quality education to talented students from rural areas, irrespective of their ability to pay. The Indian government funds the JNVs and manages through the Navodaya Vidyalaya Samiti, an autonomous organisation under the Ministry of Education. The structure of JNVs consists of residential, co-educational schools providing education from grades 6 to 12. In every district, one JNV school was established by the government of India. The core vision is to offer comprehensive education, fostering intellectual, social, and emotional development while promoting unity, equality, and social harmony. The JNV

schools are located in rural areas, with an enrolment ratio of 75% rural and 25% urban.

Students enrolled in JNV schools initially face difficulty adjusting to the residential environment because there is an established policy for their welfare. New students, mainly from rural areas and economic status, encounter challenges in adapting to the school's established culture. This transition period of adaptation varies from student to student, but past practices have shown that it often takes a year or more to adjust effectively.

The scholar suggested that introducing regular yogic practice among newly admitted students could help reduce their transitional period to a new culture, which includes a scheduled wake time and other academic activities. Yoga practices like Pranayama and meditation would facilitate better adjustment by promoting psychological well-being. In contrast, regular asana practice can develop psychomotor skills, serving as a beneficial by-product since students mostly enter JNV at 11 to 12 years old.

Yoga is a longstanding practice of physical, mental, and spiritual disciplines that began in India over 5,000 years ago. It includes various activities such as physical postures (asanas), breath control (pranayama), meditation, and ethical guidelines meant to enhance overall health and well-being (Kumar & Singh, 2019). Throughout history, yoga has become globally recognised as a comprehensive method for achieving physical fitness, mental clarity, and emotional stability. Its focus on mindfulness and self-awareness makes it particularly beneficial for stress management and improving quality of life (Smith, 2021). Nowadays, yoga is acknowledged as a form of exercise and a journey toward spiritual development and personal growth.

Yoga is widely recognised as a beneficial practice for enhancing overall well-being. It integrates physical postures, breathing techniques, and meditation to improve health, alleviate stress, and boost mental clarity (Field, 2011). Studies indicate that regular yoga can decrease cortisol levels, enhance flexibility, and encourage relaxation, all of which foster physical and psychological health (Ross & Thomas, 2010). Moreover, yoga promotes mindfulness and self-awareness, potentially leading to greater emotional resilience and a more balanced lifestyle

(Cramer et al., 2018). Adding yoga to daily routines can greatly improve an individual's well-being and quality of life.

Yoga is increasingly acknowledged for its beneficial effects on psychological well-being. It alleviates symptoms of stress, anxiety, and depression by encouraging relaxation, mindfulness, and emotional control (Sharma & Sharma, 2017). Yoga stimulates the parasympathetic nervous system through enhanced self-awareness and breathing techniques, soothing the mind (Cramer et al., 2013). Numerous studies have shown that consistent yoga can uplift mood, boost cognitive function, and build resilience against psychological challenges (Field, 2016). As a result, yoga serves as a valuable complementary method for maintaining and enhancing mental health.

Yoga greatly improves psychological well-being by lowering stress (Ross & Thomas, 2010), easing anxiety and depression through elevated GABA activity (Streeter et al., 2010), and promoting mindfulness and emotional resilience (Khalsa et al., 2012). It also boosts cognitive functions such as memory and attention (Gothe et al., 2019) while enhancing sleep quality (Patra & Telles, 2009).

Psychomotor skills involve coordinating cognitive functions with physical movement and merging mental processes with bodily actions to execute tasks efficiently. These skills are vital in activities demanding precise timing, control, and coordination, such as sports, rehabilitation, and everyday tasks (Harre et al., 2013). The development of psychomotor abilities starts in infancy and continues throughout a person's life, shaped by biological, psychological, and environmental factors. They are key in learning new skills, enhancing physical fitness, and improving overall functional capabilities (Landy & Salas, 2012). Grasping psychomotor functioning is crucial in fields like education, healthcare, and sports science, where optimising motor performance is often a primary objective. Psychomotor variables highlight the interaction between cognitive processes (such as attention, perception, and decision-making) and physical movement, influencing how individuals engage with their surroundings. These variables are essential for understanding human performance in education, sports, rehabilitation, and professional tasks. Psychomotor skills integrate motor abilities

(physical actions) with the cognitive processes that direct them (Schmidt & Lee, 2011).

Psychological well-being (PWB) is a multidimensional framework defined by Carol Ryff that emphasises optimal human functioning beyond just the absence of mental illness. Developed in the late 1980s, Ryff's model integrates humanistic, existential, and developmental psychology insights to provide a comprehensive understanding of what constitutes a "well-lived life" (Ryff, 1989). It consists of six core dimensions: self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth.

Self-acceptance involves maintaining a positive self-regard and acknowledging both strengths and weaknesses. Ryff (1989) identifies this dimension as central to PWB, asserting that individuals who embrace their authentic selves enjoy enhanced emotional stability and resilience. Empirical research shows a connection between self-acceptance and lower levels of depression and anxiety, as it reduces self-criticism and promotes self-compassion (Neff, 2003). This dimension also highlights the ability to build warm, trusting relationships characterised by empathy and reciprocity. According to Ryff (1989), meaningful connections serve as a buffer against loneliness and are vital for emotional support. Studies indicate that individuals with strong social networks have lower cortisol levels (indicating reduced stress) and higher life satisfaction (Holt-Lunstad et al., 2010). In contrast, poor relationships are linked to a higher risk of mental health disorders (Umberson & Montez, 2010).

Autonomy denotes self-determination and the power to resist social pressures to conform. Autonomous individuals assess themselves according to personal standards rather than relying on external validation (Ryff, 1989). For example, pursuing a career aligned with personal values despite societal expectations illustrates autonomy. Research correlates this trait with increased motivation and creativity (Deci & Ryan, 2000). However, it is essential to

recognise that cultural contexts (e.g., collectivist societies) might prioritise interdependence over autonomy (Markus & Kitayama, 1991).

Environmental mastery involves managing daily responsibilities, shaping one's surroundings, and capitalising on opportunities. Ryff (1989) links this dimension to a sense of control over life circumstances, which mitigates feelings of helplessness. An individual who manages work and personal life successfully exemplifies high environmental mastery. Research indicates that this trait predicts better coping strategies during crises (Frazier et al., 2011) and higher job satisfaction (Spreitzer et al., 2005).

Purpose involves establishing goals, direction, and a meaningful life perspective. Ryff (1989) contends that individuals with a strong sense of purpose perceive their lives as coherent and significant, facilitating perseverance during hardships. Goal-setting therapy and similar interventions can strengthen this dimension by aligning daily activities with long-term objectives (McKnight & Kashdan, 2009).

Personal growth involves continuous self-improvement and openness to new experiences. Ryff (1989) characterises it as the quest for untapped potential, such as learning new skills or adapting to change. Those focusing on personal growth tend to exhibit greater curiosity and adaptability (Steger et al., 2008). However, critics argue that societal barriers, such as economic instability, can limit growth opportunities, particularly for marginalised communities (Ryff, 2014).

Some critics claim that specific dimensions coincide with personality traits (such as neuroticism and self-acceptance; Abbott et al., 2006) and that the model's Western perspective could restrict its global relevance (Joshanloo, 2014). Ryff (2014) advocates for culturally sensitive modifications while maintaining the framework's core principles.

Yoga is a versatile method for improving psychomotor skills among various groups, including athletes and rehabilitation patients. Combining physical postures, breath control, and mental concentration effectively connects motor performance with psychological strength. Future research should investigate customised yoga routines tailored to the specific psychomotor needs of different sports. Psychomotor variables include coordination, balance, agility, reaction time, and proprioception. Through its focus on controlled postures (asanas), mindful movements, and synchronised breathing, yoga enhances these skills via neuromuscular adaptation and proprioceptive training. This ancient mind-body practice- incorporating asanas, pranayama, and dhyana- has been widely associated with improved psychological well-being (PWB). Its comprehensive approach touches on all six aspects of Ryff's PWB model, supporting mental, emotional, and social health. Integrating physical, mental, and spiritual practices, yoga is a powerful tool for enhancing psychological wellness, particularly for high-stress groups like residential school students, athletes, and individuals in clinical environments. Future studies should refine protocols for specific groups and examine long-term benefits. Traditionally known for promoting flexibility and relaxation, yoga is now recognised as a valuable intervention for improving adolescent movement speed. It effectively addresses physical and psychological performance barriers, making it an excellent resource for enhancing adolescent speed and agility. Introducing yoga in athletic and school environments can foster overall development while reducing injury risks.

Surya Namaskar, or Sun Salutation, is a fundamental yoga sequence that integrates physical postures, breath control, and mindfulness. This practice consists of 12 dynamic asanas performed continuously and is generally done at sunrise to celebrate the sun, representing spiritual enlightenment and energy in Vedic traditions (Basavaraddi, 2020). With its roots in ancient Indian practices,

it combines physical exercise, breath alignment, and meditative focus, serving as a comprehensive tool for well-being (Saraswati, 2008).

Steps of Surya Namaskar

The sequence starts with Pranamasana (Prayer Pose), cultivating gratitude and centring the mind. It then moves into Hasta Uttanasana (Raised Arms Pose), which stretches the spine and activates the respiratory system. Next is Uttanasana (Forward Fold), which improves hamstring flexibility and soothes the nervous system. Following this is Ashwa Sanchalanasana (Equestrian Pose), which enhances leg strength and balance. The fifth position, Phalakasana (Plank Pose), reinforces core stability, while Ashtanga Namaskara (Eight-Limbed Pose) builds upper-body strength. Bhujangasana (Cobra Pose) opens the chest and enhances spinal mobility, leading into Adho Mukha Svanasana (Downward-Facing Dog), which stretches the back muscles and promotes circulation. The sequence is repeated before ending with Pranamasana (Saraswati, 2008). Each movement aligns with inhalations or exhalations, improving oxygenation and mindfulness (Ministry of Ayush, 2021).

Scientific studies underscore the multifaceted advantages of Surya Namaskar. It boosts cardiovascular endurance by varying heart rate, resembling moderate-intensity exercise (Sinha et al., 2015). Its dynamic nature, involving stretching and holding, improves flexibility in the spine, hips, and shoulders. Consistent practice stimulates the endocrine system, which helps regulate metabolism and manage weight (Saraswati, 2008). Movements linked to breathing enhance respiratory efficiency, while a meditative focus lowers cortisol levels, reducing stress and anxiety (Ministry of Ayush, 2021). A 12-week study observed notable enhancements in participants' lung capacity and blood pressure (Sinha et al., 2015).

Surya Namaskar goes beyond physical movement; it reflects the Vedic respect for the sun as the source of life. Each pose stimulates distinct energy channels (nadis) and chakras, connecting the practitioner with solar energy (Basavaraddi, 2020). The mantras recited throughout the practice call upon solar deities, enhancing spiritual connections. Ayurveda highlights its significance in

balancing the Pitta dosha, which relates to metabolic and mental health (Ministry of Ayush, 2021).

Surya Namaskar is a comprehensive practice that encompasses physical, mental, and spiritual health. Suitable for various fitness levels, it is a full workout, a stress relief method, and a meditation exercise. Beginners should seek guidance to prevent strain. Its enduring significance stems from its ability to align with contemporary lifestyles while maintaining ancient traditions and wisdom.

In this study, the researcher undertook a modest investigation into how yogic practices influence the psychological well-being and psychomotor variables of residential school girls, specifically those enrolled at JNV Chandauli.

Statement of the problem

The study's purpose is to determine the "Effect of Yoga Intervention on Psychological Well-being and Psychomotor Variables of Residential School Girls."

Objectives of the Study

1. Assess the current Psychological Well-Being of school-going girls.

2. Evaluate the current Psychomotor Variables of school-going girls.

3. Compare the effects of yoga intervention on psychological well-being and psychomotor variables between the experimental and control Groups

Delimitation

1. The study will be delimited to 60 female school students (30 in the Yoga Intervention group and 30 in the Control Group) at Jawahar Navodaya Vidyalaya Chandauli.
2. The study will be delimited to a 12-week Yoga Intervention Programme.
3. The study will be also delimited to subjects aged between 13 and 16.
4. The study will be delimited to Ryff's Psychological Well-Being Scales (PWB), 42 Item Version. Questionnaire.
5. The study will be delimited to the following Psychomotor Variables: -

   I Speed.

   II Speed of Movement.

   III Kinesthetic Perception.

   IV Differentiation ability.

   V Orientation Ability.

   VI Balance Ability.

   VII Rhythm Ability.

   VIII Reaction Ability.

Limitations

1. The lack of sophisticated instruments will be considered a limitation of the study.

2. The influence of uncontrollable factors on the selected psychomotor variables is also recognised as a limitation.

3. The lack of motivation and the differing interests among subjects regarding the yoga intervention may affect the results of this investigation, making it another limitation of the study.

Hypothesis

1. The present study's first hypothesis is that there will be no significant difference in the Psychological Well-Being of the Experimental Group and the Control group of residential girls' students.

2. The Second hypothesis of the present study is that there will be no significant difference between the Speed of the Experimental Group and the Control group of residential girls' students.

3. The third hypothesis of the present study is that there will be no significant difference between the Speed of movement of the Experimental Group and the Control group of residential girls' students.

4. The fourth hypothesis of the present study is that there will be no significant difference between the kinesthetic perception of the Experimental Group and the Control group of residential girls' students.

5. The fifth hypothesis of the present study will be that no significant difference exists between the differentiation ability of the Experimental Group and the Control group of residential girls' students.

6. The sixth hypothesis of the present study will be that there is no significant difference between the orientation ability of the Experimental Group and the Control group of residential girls' students.

7. The seventh hypothesis of the present study will be that there is no significant difference between the Balance ability of the Experimental Group and the Control group of residential girls' students.

8. The eighth hypothesis of the present study that will be no significant difference exists between the Rhythm ability of the Experimental Group and the Control group of residential girls' students.

9. The ninth hypothesis of the present study will be that no significant difference exists between the Reaction ability of the Experimental Group and the Control group of residential girls' students.

DEFINITION AND EXPLANATION OF TERMS

Psychological Well-Being

Psychological well-being is defined as positive emotional states, such as life satisfaction and effective functioning across personal, social, and existential areas. It is marked by self-acceptance, purpose, autonomy, and resilience (Ryff, 1989). This concept includes both hedonic (pleasure-seeking) and eudaimonic (meaning-focused) aspects of mental health (Keyes, 2002).

Psychomotor Components

Psychomotor components involve integrating cognitive processes with physical movement to execute skills requiring coordination, precision, and neuromuscular control. Their development includes fostering manual or physical abilities through practice, repetition, and feedback, making them essential in sports, medicine, and vocational training (Dave, 1970). Within educational taxonomies, the psychomotor domain stresses the evolution from basic imitation to complex, autonomous performance (Simpson, 1972).

According to Dave (1970), psychomotor learning progresses through stages such as imitation (copying actions), manipulation (performing tasks based on instructions), precision (executing tasks with accuracy), articulation (coordinating movements seamlessly), and naturalisation (mastering skills effortlessly). Examples include a surgeon suturing a wound or a musician playing an instrument, both of which showcase advanced psychomotor competence (Clark, 1999). These skills depend on sensory feedback, muscle memory, and cognitive processing to enhance actions over time.

Psychomotor components also play a crucial role in educational curricula, especially in STEM and the arts, where hands-on experimentation and technical skills are emphasised (Kibble et al., 2016). Research indicates that focused practice and contextual reinforcement improve psychomotor mastery, linking theoretical knowledge with practical application (Ericsson et al., 1993).

The term psychomotor pertains to observable voluntary human movement. Psychomotor components relate directly to muscular actions or motor skills, involving manipulating materials and objects that necessitate neuromuscular coordination.

Physical education and sports heavily rely on motor skills, so psychomotor components are particularly relevant for physical educators and coaches. Most sports tasks demand a high degree of development of psychomotor components, particularly reaction time, movement speed, kinesthetic perception, and depth perception, all of which are key to achieving optimal performance.

Speed

Speed in sports is defined as the capacity to swiftly move the body or a particular body part from one location to another in a controlled way, frequently playing a crucial role in achieving optimal athletic performance (Jeffreys, 2010). It serves as an essential element of physical fitness. Speed is specific to each sport and encompasses acceleration (the rate of increasing velocity), maximum velocity (the highest possible speed), and speed endurance (the ability to sustain speed over time) (Bompa & Haff, 2009). For example, a sprinter's explosive start or a soccer player's agile dribble depends on neuromuscular efficiency, reaction time, and the recruitment of fast-twitch muscle fibres (Sheppard & Young, 2006).

Speed differs from agility (about direction changes) and quickness (the response to stimuli), although these elements frequently intersect in training. Factors such as genetics, biomechanics, strength, and training methods all impact speed (Jeffreys, 2010). Coaches emphasise exercises like plyometrics and sprint intervals to improve speed tailored to specific sports (Bompa & Haff, 2009).

Speed of Movement

In sports, the speed of movement refers to how quickly an athlete's body or specific body parts, such as limbs, move during specific activities, measured as distance covered over time (Young et al., 2002). It highlights the pace of distinct actions, like a baseball pitcher's arm rotation or a boxer's punch, differing from overall body movement speed (Jeffreys, 2010).

This aspect depends on neuromuscular efficiency, which encompasses quick motor unit recruitment, activation of fast-twitch muscle fibres, and correct joint mechanics (Bompa & Haff, 2009). For instance, the speed of a tennis player's serve relies on the effective sequencing of the kinetic chain- comprising leg drive, trunk rotation, and shoulder-arm whip- to achieve maximum racket-head velocity (Kovacs et al., 2007). Training techniques such as ballistic exercises (like medicine ball throws) and overspeed drills (such as resisted sprints) are applied to improve movement-specific speed (Sheppard & Young, 2006).

Kinesthetic Perception

Kinesthetic perception in sports is the capacity to recognise and understand the positioning, movement, and strength of one's body parts in space. This ability is crucial for coordination, balance, and accurate motor control in athletic activities (Schmidt & Lee, 2014).

Differentiation Ability

The ability to differentiate in sports involves accurately controlling movements' intensity, direction, and force to execute skills effectively. This entails refining motor actions to adjust to different task requirements and environmental conditions (Magill & Anderson, 2014).

Orientation Ability

Orientation ability in sports describes the athlete's skill to recognise and adjust their body position and movements about their surroundings, opponents,

or equipment during dynamic tasks (Hirtz et al., 1985). This ability allows for accurate spatial-temporal adjustments, like repositioning in team sports or keeping balance in gymnastics (Schmidt et al., 2019).

Balance Ability

Balance ability in sports refers to maintaining static or dynamic equilibrium by managing body position during movements, leveraging sensory feedback and neuromuscular coordination (Hirtz et al., 1985). This skill is essential for stabilising the body's centre of mass over its base of support, which is particularly important in activities such as gymnastics or surfing (Winter, 1995).

Rhythm Ability

Rhythm ability in sports signifies the skill to perform movements with accurate timing, pace, and order, frequently synchronised with external signals (e.g., music, rivals) or internal rhythms (Hirtz et al., 1985). This ability allows athletes to coordinate intricate motor patterns, as seen in activities like dance, gymnastics, or rowing, by matching their actions to rhythmic requirements (Smoll, 1982).

Reaction Ability

In sports, reaction ability is the capability to swiftly initiate suitable motor responses to external stimuli, such as visual and auditory cues, with minimal delay (Hirtz et al., 1985). This skill includes processing sensory information and executing movements effectively, essential for sprint starts or intercepting a ball (Schmidt et al., 2019).

Yoga

Yoga is a comprehensive practice that dates back to ancient India. It combines physical postures (asanas), breath regulation (pranayama), and meditation to create balance among the body, mind, and spirit (International Journal of Yoga, 2009).

Asana

Asana refers to yoga's physical postures or poses designed to enhance strength, flexibility, and mindfulness while aligning breath and body (Sinha et al., 2013).

Pranayama

Pranayama involves breath control in yoga, using specific techniques to manage inhaling, holding, and exhaling to achieve physical and mental equilibrium (Joshi & Telles, 2015).

Meditation

Meditation is a mind-body practice that uses focused attention and awareness to foster mental clarity, emotional tranquillity, and inner balance (Sharma et al., 2014).

Residential School

Residential schools are schools in which students reside inside the campus for their schooling. JNVs are schools run by the government of India in rural areas where all the students reside on campus.

Yoga Intervention

A yoga intervention is a planned program integrating different yoga practices—like physical postures (asanas), breathing techniques (pranayama), meditation, and relaxation techniques—to enhance physical, mental, and emotional wellness. This approach is frequently employed in clinical and research environments to evaluate its therapeutic benefits for various health issues (Cramer et al., 2013).

Significance of the Study

1. This yoga intervention programme may be an alternative to regular physical exercises.
2. The findings might help physical education teachers in JNVs and other schools in India to adopt this as an intervention programme for the health and well-being of the students.
3. The study's findings may add new knowledge in Yoga and education, exercise, and sports psychology in general and in particular.
4. Physical education teachers, coaches, and health and fitness professionals can use Yoga Intervention knowledge in their training sessions to develop and maintain Psychomotor variables, the most essential elements of skill competency.

Chapter- II

REVIEW OF RELATED LITERATURE

The research scholar has diligently sought literature pertinent to this study. Reviewing relevant literature is a crucial step in understanding the existing work related to the issue at hand. This review provides a thorough and clear perspective of the field. Familiarity with the literature on any subject helps the scholar identify what is already known, the efforts others have made to investigate, which approaches have proven effective or ineffective, and the unresolved issues that remain. The review grants the investigator valuable insights, enhancing clarity and fostering a deeper understanding of the problem at hand and its various associated factors. The Literature in any field forms the foundations upon which all future work was built.". The research scholar has examined all available literature from the library of Lakshmibai National University of Physical Education, Gwalior, Banaras Hindu University, Varanasi, and the research scholar also searched relevant studies from the World Wide Web and other encountered sources are cited below. It aims to provide a theoretical foundation and context for the study by examining previous research, theories, and findings relevant to the topic. Collected reviews belong to a year from 2024 to 2003 in descending order.

(Sriharisukesh et al., 2024) in the present study it had been observed that the Results from many tests showed that the yoga intervention had a substantial impact on improving psychomotor variables, such as neuro-motor function, eye-hand coordination, and dynamic balance, in intellectually impaired patients ($P < 0.05$). ***Technical Approach*** The control group and the adaptive yoga module were evaluated using the Functional Reach Test, the Wall Toss Test, and the Finger Tapping Test. ***The results showed that the subjects*** with intellectual disabilities improved their physical and cognitive abilities after practicing adaptive yoga. The study's control group failed to demonstrate any notable improvement. ***In summary*** the students benefitted from adaptive yoga by increasing their flexibility, stability, and coordination. The benefits of yoga on cognition and motor skills become apparent after just one month.

(Bağkur et al., 2024) The present study investigated yoga treatments, which shows improvement in the speed ability of preadolescent children, especially schoolgirls, as part of

their total physical fitness development. According to the study, there were substantial positive enhancements in speed among children in the Yoga Group. ***Technical Approach*** The design is a randomised control with two groups. The EUROFIT Test Battery is used to evaluate benefits. ***Result*** There were statistically significant increases in fitness metrics among the yoga group. Improved abilities encompassed quickness, agility, stamina, and cardiovascular health. ***In summary***, yoga enhances preteens and teenagers' physical fitness. Given its efficacy, the yoga intervention programme should be included in educational curricula.

(Sobha & Nandhini, 2024) To evaluate the effects of yoga on balance and coordination. The research concentrates on the physical development of pubescent indigenous students. ***Approach*** The subjects were categorized into two groups: yoga and control. Balance and coordination assessed prior to and following training. ***The result*** balance markedly enhanced following twelve weeks of yoga practice. The coordination significantly improved subsequent to the yoga training. ***Final Assessment*** Yoga markedly enhanced the balance and coordination in students. It shows Twelve weeks of practice demonstrated significant beneficial outcomes.

Courbet et al. (2024) Mental health challenges in young people can have far-reaching negative impacts on academic achievements, career prospects, and physical health. Psychological well-being (P-WB) serves as a critical protective factor against mental disorders. Initial studies indicate that mindfulness- and yoga-based socio-emotional learning (SEL) interventions can enhance preschoolers' P-WB positively. This trial aims to systematically assess the effects of a 24-week combined mindfulness- and yoga-based SEL intervention in preschool children from socio-economically disadvantaged backgrounds in France. Methods: The P-WB enhancement intervention is evaluated against a wait-list control in a cluster randomised controlled trial (RCT). Sixty-four pre-kindergarten classrooms are allocated to either the intervention or control group. Primary outcomes focus on self-management abilities and essential P-WB components: connection, insight, engagement, and positive relationships. Secondary outcomes encompass measures of mental health, executive functioning, and academic performance. Both primary and secondary outcomes was gathered through teacher surveys, standardised observations of children in their school environment, experimental tasks, and national evaluation outcomes in first grade. All child-level outcomes was assessed before the intervention, at its conclusion, and one year later for follow-up, with the exception of school

performance, which was evaluated only at follow-up. Intention-to-treat analyses, accounting for clustering within classes, will utilise a random effects linear regression model to compare outcomes between intervention and control children. Discussion: This trial represents the first rigorous examination of a combined mindfulness- and yoga-based P-WB enhancement intervention and the inaugural RCT evaluating an SEL curriculum in French educational settings. The findings could have significant implications for promoting P-WB among preschool children.

(Borotikar et al., 2023) The study employed a nonrandomized design with 90 retired males aged 60 to 75 years, selected via purposive sampling. Participants underwent a 14-week yoga intervention of daily 90-minute sessions at a yoga training centre in Pune, India. Each session comprised gentle exercises, stretching, respiratory techniques, relaxation, and meditation. The researchers employed Ryff's validated scale to evaluate psychological well-being across six areas. The intervention data were examined with a t-test to assess the significance of increases in participants' psychological well-being. The research indicated that integrated yoga practice significantly enhanced the psychological well-being of retired males, with a p-value of less than 0.05 demonstrating statistical significance in the findings. The study employed Ryff's validated scale to assess psychological well-being across six domains, revealing that a structured 14-week yoga intervention significantly enhanced the participants' mental health. The study determined that integrated yoga practice markedly enhances the psychological well-being of retired men, as demonstrated by a p-value of less than 0.05, signifying statistical significance in well-being improvement following the 14-week intervention. The results indicate that the beneficial impacts of yoga on psychological well-being need further investigation and application in larger cohorts to evaluate and improve the mental health of retirees.

(Dubey, 2023) the present investigation Examine the effectiveness of yoga on spatial awareness in visually impaired adolescents. This research Provides a comprehensive overview of conflicting study findings. Comprehensive examination of the PubMed, Embase, and PsycINFO databases. Criteria for inclusion: English studies from 2000 to 2022 demonstrating methodological rigor. Yoga therapy significantly improved spatial awareness in visually impaired youth. The meta-analysis indicated a standardized mean difference of 0.53. Yoga

improves spatial awareness in youngsters with visual impairments. The duration and frequency of yoga practices affect the improvement of spatial awareness.

(Madhu et al., 2023) Investigate the stigma around mental health issues among college students. Evaluate the effectiveness of Yoga and Raj Yoga meditation therapies. EEG signals recorded during PEBL tasks before and after the intervention Scores from PEBL battery tasks collected before and after the session revealed that post-intervention meditators exhibited improved cognitive function and memory capacity. Increased theta, alpha, and beta power in specific brain regions. Yoga and Raj yoga meditation improve cognitive functions. Augments spatial attention, memory, and working memory.

(Luo & Huang, 2023) The present study examines the impact of yoga on balance and flexibility. Examine health issues impacting female college students during the COVID-19 pandemic. This study is a randomized controlled trial conducted during the COVID-19 pandemic.The assessment of balance and flexibility utilized the single-limb stance test, Romberg test, sit and reach test, and splits test. The yoga intervention improved balance from 5.35 to 5.7 seconds. Flexibility enhanced by 3.5 to 6 centimeters throughout a 16-week training period. The yoga intervention improves balance and flexibility in female college students. Online yoga classes should be advocated for health improvement.

(Raju et al., 2023) The speed ability of the yoga intervention group increased significantly by 6.83. The results were similar to those of the strength training and combined strength and yoga groups, suggesting that yoga improves cricket players' pace. ***Technical Approach*** the Strength training group and yoga training group were kept apart. Yoga and strength training combined with a control group. ***The outcome*** was notable enhancements to batting prowess, VO2 Max, and speed. Similar outcomes were observed in the strength training, yoga, and combined training categories. ***In summary*** Cricket performance is enhanced through strength training and yoga. More investigation into the function of yoga in top training is required.

(Gupta & Singh, 2022) The study's findings indicated that yoga promotes mental health and self-awareness despite not addressing psychomotor characteristics. The study demonstrated that a structured yogic intervention significantly boosted psychological well-

being among adolescent girl pupils. A study is being conducted to investigate yoga's role in improving young women's psychological well-being. It has been discovered that yogic activities help enhance mental health and promote calm. Participants were randomly assigned to either the experimental or control group. They were evaluated using a checklist to assess their psychological well-being before and during the intervention. Both the experimental group and the control group exhibited significant shifts in their psychological well-being. Individuals in the control group did not display the same alterations. The yoga practice has been shown to improve the psychological well-being of female students in their teenage years. Practising yoga can improve one's mental health and increase one's awareness of oneself.

Chapter III

PROCEDURE

This chapter discusses the selection of the subjects, the selection of the variable criterion measure, the description and administration of the test, the collection of data, and the statistical procedure for analysing the data.

Selection of the Subject

The primary data source for the present study will be 60 schoolgirl students. The subjects will be selected randomly and divided into two groups: 30 Experimental (Yoga Intervention) and 30 Control groups. The subjects' age range is 12 to 15.

Selection of the Variables

The independent variables, i.e., yoga intervention, will be given to determine the effect on psychological well-being and select psychomotor variables for residential school girls.

Table-1

List of selected variables and criterion measures for the study

Criterion Measure's

Sl. No	Variable	Name of Test	Test (Unit)
1.	Questionnaire	Psychological Well-Being Ryff's Psychological Well-Being Scales (PWB), 42 Item Version	In Numbers
Selected Psychomotor Variable			
3	Speed.	50 Yard Dash	1/100th Sec.
4.	Speed of Movement	Nelsons Speed of Movement Test	In Sec
5	Kinesthetic Perception.	Kinesthetic Perception test	In Inch
6	Differentiation ability	Backward medicine ball throw	In Points
7	Orientation Ability	Medicine ball run test	1/100th Sec.
8	Balance Ability	Stork Stand Test	1/100th Sec.
9	Rhythm Ability	Straight and Rhythm Run Test	1/100th Sec
10	Reaction Ability	Visual Reaction Timer	1/100th Sec.

ADMINISTRATION OF THE TEST

MEASUREMENT OF SELECTED PSYCHOMOTOR VARIABLES

i. SPEED:

Criterion Measures: To measure speed, a standard 50-yard dash test (Johnson, Borrey, and Nelson, Jack K.1988) is applied.

Purpose: To determine the Speed of the subjects.

Equipment: Pen, Pencil, Paper, Stop Watches, Track, Marking Powder and Measuring Tape.

Test administration: The experiment will be done on JNV Chandauli's track. The tests were held individually, one by one, with the subject, helpers, and researcher present at the place of the experiment.

As a first step in the test procedure, the subject will be told the general nature and purposes of each test before starting the actual test. Then, a demo will be given to the subject before the test will be applied.

Procedure: The tester gives instructions to the subjects in advance. After the warm-up, subjects, preferably in pairs, are asked to take the starting position behind the starting line and to wait for the signal "GO". Separate helpers with stopwatches will be invited to watch each subject at the finish line. At the command GO, the timers start their respective stopwatches, and the sprinters start

their sprints. As soon as the subjects cross the finish line, the respective timer switches off his stopwatch and records the time accurately up to 0.01 seconds.

Score: The course completion time will be noted in seconds and recorded in 1/100th second. Two trials were given to each subject, and the better one will be recorded as a score.

ii. Nelson Speed of Movement Test

Purpose:

To measure the Speed of movement of the subject.

Equipment's:

Yardstick, table, chair.

Procedure:

Before conducting the Speed of movement test, all the test details were again clearly explained to the subjects, and each subject will be given five practice trials at the beginning to familiarise him with the test procedure.

The subject will be seated on a chair, facing the table, with his hands resting over the table's edge. The palms were kept facing each other with an inside border of the little fingers resting along two lines marked from the edge of the table 12 inches apart. The research scholar held the scale near the top so that it hung mid-way between the subject's palm with the baseline of the scale positioning evenly

with the upper edges of the subject, and the subject looked at the concentration zone. After a predatory command 'ready," the meter scale will be dropped, and the subject stopped it as quickly as possible with an inward horizontal movement of arms.

Only five trials will be given to each subject (twenty trials according to a prescribed procedure as it may produce fatigue and affect the scores of the other tests conducted simultaneously).

Scoring:

The distance the scale falls through the hands before it is stopped every time will be recorded. The average of five trials will be taken as a distance score. This distance score will be then converted to a time score by applying the following formula:

$$Time = \sqrt{\frac{2\ x\ Distance\ the\ scale\ falls}{Acceleration\ due\ to\ Gravity}}$$

(iii) Kinesthetic Perception Test

Purpose:

To measure the kinesthetic perception of the subject.

Equipment's:

Yardstick, blind folder, chair, and horizontally marked wall.

Procedure:

A yardstick will be placed on the wall so that it will be approximately at eye level while the student will be in a sitting position. The subject will be asked to sit on the chair facing the yardstick and attempt to establish a sense of its position in his mind. Folded and without a practice trial, he pointed the index finger of his right hand to the point indicated by the instructor.

Scoring:

The score will be the deviation from the desired mark, measured inch. The final score will be the total deviation of the nearest quarter inches in three trials 3.

iv. DIFFERENTIATION ABILITY:

Criterion Measures:

The Backward Medicine Ball Throw Test will be used to measure Differentiation Ability.

Purpose:

The test will be administered to assess the differentiation ability of the subjects.

Equipment: A gymnastic mat size 3X6, one medicine ball weighing 2 kg, five medicine balls weighing 1 kg each, pencil, paper, and pad.

Test administration: The experiment will be done in the basketball courts of JNV Chandauli. Before applying the test, a demo will be given to the subject.

Procedure: As shown in the figure, a gymnastic mat will be kept 2m from the starting line. A circle of 40 cm. radius will be drawn in the middle of the mat, and a medicine ball of 2 kg will be kept at the centre of the circle. The subjects were asked to stand behind the starting line facing the opposite direction. They were asked to throw ten medicine balls (1kg) over the head to hit the 2 kg ball kept on the mat, one after another, by using both hands. One practice trial will be given to all the subjects.

Instructions:

1. One overhead throw will be permitted.

2. The students were not allowed to look back

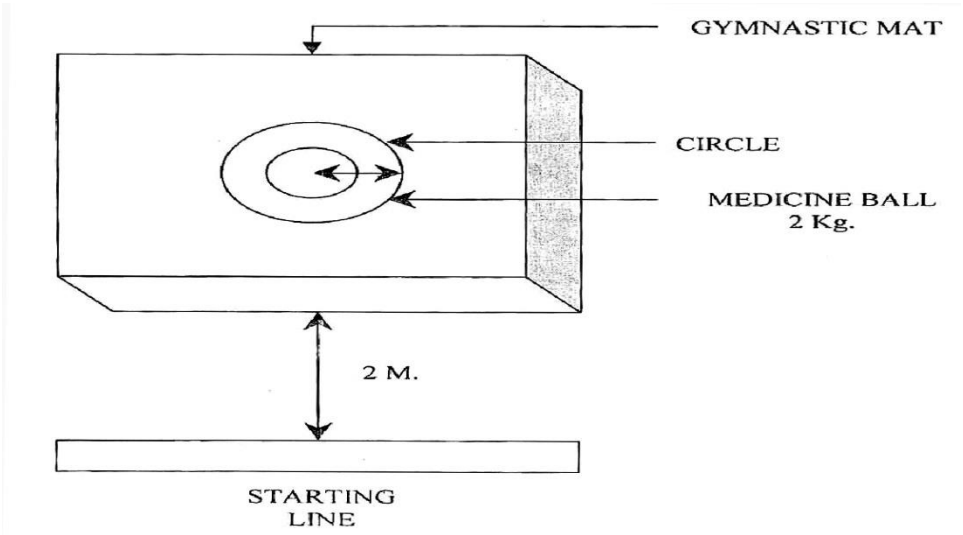
Scoring:

a. Medicine ball touching the mat = 1 pt.

b. Medicine ball touching the circle line = 2pts.

c. Medicine ball inside the circle = 3 pts.

d. Medicine ball touching the ball (2 kg medicine ball kept at the circle's center) = 4 pts. Points were decided considering the 1st pitch of the ball. The score of the individuals will be the total points scored in all ten throws.



v. ORIENTATION ABILITY

Criterion Measures: Numbered Medicine Ball Run Test is applied to measure Orientation Ability.

Purpose: To determine the orientation ability of the subjects.

Equipment: Five medicine balls, each weighing 3 kg., One medicine ball weighs 4 kg. Stop watching Clapper, Pencil, Papers and Pads.

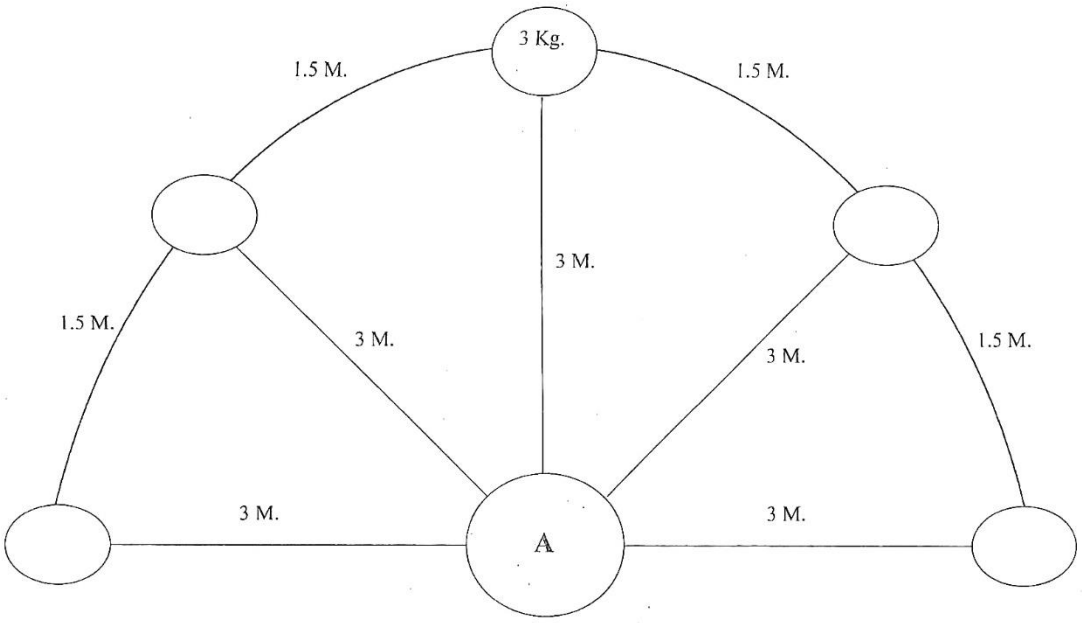
Test administration: The experiment will be done in the basketball courts of JNV Chandauli. Before applying the test, a demo will be given to the subject.

Procedure: All the medicine balls weighing 3 kgs were arranged as shown in Figure 3.2 on an even ground in a semi-circle with a distance of 1.5 m. between the balls. The subject's medicine ball, weighing 4 kg, will be kept 3 m away from these medicine balls. Behind all the medicine balls of 3 kg weight, metallic number plates of 1 sq. foot size were kept, from 1 to 5. Before the start of the test, the subjects were asked to stand behind the sixth medicine ball and face in the opposite direction. On signal, the subjects turned and ran towards the number called by the tester, touched the medicine ball and ran back to touch the sixth medicine ball; immediately, another number will be called. Similarly, a total of three times the number will be called by the tester and the subjects performed accordingly. Before the actual test will be administered, one practice trial will be given to all the subjects.

Scoring: The time taken to complete the course will be noted in seconds. Two trials were given to each subject, and the better one will be recorded as a score.

B – Medicine Ball Weighing 4 Kg.

b – Medicine Ball Weighing 3 Kg.



Numbered Medicine Ball Run Test for Orientation Ability

vi. BALANCE ABILITY:

Criterion Measures: The Stork Stand Test will be used to measure the Balance ability of the subjects.

Purpose: The test measures the performer's balance while supported on the ball of the foot of the dominant leg.

Equipment: Stopwatch, Pen, Pencil and Papers

Test administration: The experiment will be held in the basketball courts of JNV Chandauli. Before applying the test, a demo will be given to the subject.

Procedure: The performer will be asked to stand on the foot of the dominant leg and place the other foot on the inside of the supporting knee. The subject will be instructed to place the hands on the respective sides of the waist. The subject will be informed that he should stand on the ball of the foot by raising his heel from the floor at the start of the signal. At the beginning of the signal, the subject raises the heel from the floor to maintain the balance as long as possible without moving the ball of the foot from its initial position, and the tester starts the stopwatch. The performer is also recognised for maintaining balance with his best efforts and not letting the heel touch the floor for the most extended duration. The tester stops the stopwatch as soon as the subject loses balance by touching the heel to the floor or loses the foot movement from an initial position.

Instructions:

1. Place the hands on the respective sides of the waist.

2. Stop the watch immediately when the subject loses balance or the heel touches the floor.

Scoring: The score memorised the time in 1/100th seconds for the maintenance of the balance on the ball of foot

vii. RHYTHM ABILITY

Criterion Measures: Straight and Rhythm Run Tests" were used to measure the Rhythm ability of the subjects.

Purpose: The test will be administered to determine the Rhythm ability of the subjects**.**

Equipment: Eleven gymnastic hoops, each 1 meter in diameter, one stopwatch, and one measuring tape.

Description: The subject had to run a distance of 30 meters with maximum sprinting Speed marked between two lines. A stopwatch took the subject's sprinting time. In the second attempt, the subject had to run at a particular rhythm with maximum Speed through eleven hoops, which were arranged systematically as shown in Fig. Three hoops were kept in a sequence adjacent to each other at a distance of 5m. away from the starting line. Similarly, three hoops were kept at a 5m distance from the finishing line. Five more hoops were kept in a sequence in the middle of the running distance. The subject had to run through these hoops, stepping between them and adjusting to the new self-rhythm. The research scholar explained the test with one demonstration, and each subject will be given two trial runs.

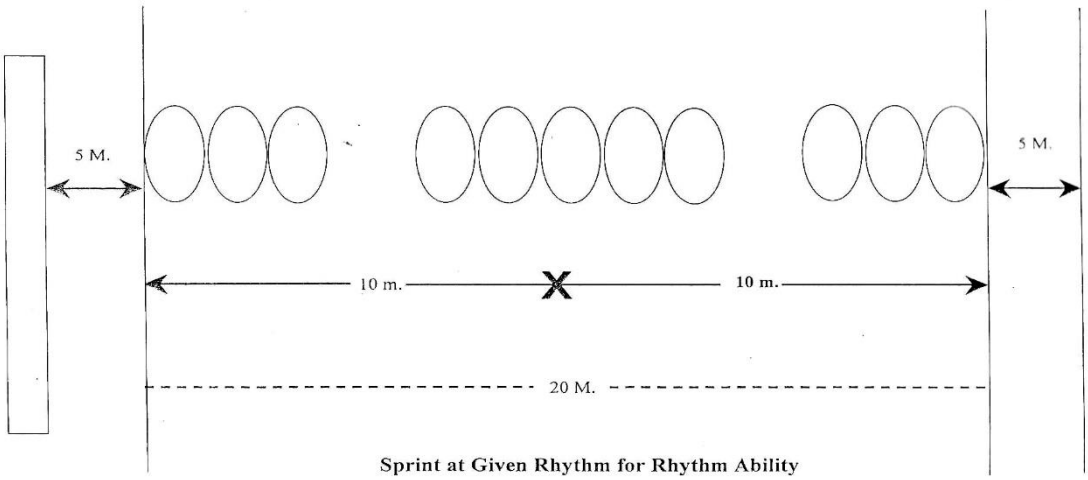
Instructions:

1. The subject had to run through the hoops, stepping between each and adjusting to the new self-rhythm.

2. Stop the watch immediately as the performer clears the finish line.

3. Two trails are given to each performer.

Scoring: The difference between the timings of 1st and 2nd attempts will be taken as the score. The score is memorised time in/the 100th second.



Sprint at Given Rhythm for Rhythm Ability

viii. REACTION ABILITY:

Reaction Time

Purpose:

To measure the reaction time of the subjects.

Equipment:

The reaction time will be recorded with the help of an Audio-Visual Reaction timer.

Procedure:

The procedure of the reaction time test will be explained and demonstrated to all the subjects before it will be administered. No motivational technique will be used, but the subjects were asked to do their best.

The apparatus will be set According to the prescribed procedure for measuring reaction time. The detachable screen will be fixed in the desired holes, which divided the reaction time apparatus into two sides: the subject sits on a chair on the subject's side, and the tester stands on the tester's side. The tester rang a bell, which will be a signal for the subjects to press the right or left key as selected by the tester with the selector's switch. Then, the tester pressed one of the short keys, giving the required stimulus (light). The short key will be a double key, which gave a stimulus and also started the chronoscope. When the subject receives the light stimulus, he lifts his finger from the right or left key, which stops the chronoscope.

Scoring:

Reaction time to the light stimulus will be read and recorded from the chronoscope. Three trials were provided to each subject, and the average of these readings will be the reaction time score.

Tentative Yoga Intervention Module

Intervention

The yoga intervention will be based on an integrated approach to yoga therapy designed by S-VYASA [27]. Details of yoga intervention are described in the [Table-2].

Table – 2 Intervention of Yoga Therapy designed by S-VYASA

SL. NO	**INTERVENTION**	**APPROXIMATE TIME FOR THE PRACTICE**	**SCHEDULE**
1.	Basic Instructions	15 minutes	First Day
2.	Breathing Practice include in and out breathing, hand stretching breathing, ankle stretch breathing, and leg raising (Alternate for both legs). Breathing. Tiger breathing, Rabbit breathing (Shashanka) breathing	10 minutes	Daily 1st week to 12th week
3.	Loosening Practice includes twisting, side bending, forward and backwards bending, and jogging	10 minutes	Daily 1st week to 12th week
4.	Sun Salutation (Surya Namaskara)	10-12 Minutes	Daily 1st week to 12th week
5.	**Asanas (Postures) Standing Posture** Half Wheel Posture (Ardhachakrasana) , Foot Palm Posture (Padahastasana), Half waist rotation Posture (Adhakaticakrasana) Tree Posture (Vrkshasana)	10-15 Minutes	Daily 1st week to 12th week

	Triangel Posture (Trikonasana) **Sitting Posture** Diamond Posture (Vajrasana) Rabbit Posture (Shashankasana) Spinal Twist Posture (Vakrasana/Ardhamastendrasana) Camel Posture (Ustrasana) Posterior Stretch (Paschimottanasana) **Supine Asana** Fish Posture (Matsyasana) Shoulder stand Posture (Sarvangasana) **Prone Asana** Cobra Posture (Bhujangasana) Grasshopper Posture (Shalabhasana) Bow Posture (Dhanurasana)		
6.	Quick Relaxation Technique (QRT)	3 Minutes	Daily 1st week to 12th week
7.	Pranayama Kapalabhati Nadishodana Pranayama Bhramari Chanting	8-10 Minutes	Daily from 2nd week

8.	Yogic Games (Krida Yoga)	8-10 Minutes	Alternate Days
9.	Meditation	5 Minutes	Once in a Month
10.	Lecture Session	10 Minutes	Once in a Month

Experimental Design

A pre-test and a post-test randomised group design will be used.

Statistical Technique

1. Descriptive statistics will be applied to determine the subjects' current status on various variables. Analysis of Co-Variance will be employed to investigate the effect of yoga intervention on psychological well-being and selected psychomotor variables.

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